Application No.: 10/669,494
Docket No.: PE0688USNA

Remarks

Status of the Application

Claims 1-4, 8-10, 54, and 58-60 are pending in the application.

New Claim 60 is added reciting the subject matter of original Claim 37 and including the limitations of original Claims 6 and 7. Claim 37 is canceled.

The pending claims are provisionally rejected under nonstatutory obviousness-type double patenting as being unpatentable over five co-pending applications. A terminal disclaimer and Statement Under 37 C.F.R. § 3.73(b) have already been filed in this matter. The pending claims also stand rejected under 35 U.S.C. § 102 or, in the alternative, under 35 U.S.C. § 103.

Claims 1, 54, 59, and 60 are the independent claims. The dependent claims depend from and further limit their respective independent claims, and thus patentably define over the references as well.

No new matter has been introduced by the addition of the new claim.

Claim Rejections – 35 U.S.C. § 102 or, in the Alternative, 35 U.S.C. § 103

EP '111

Claim 37 was rejected under 35 U.S.C. § 103(a) as obvious over EP 0593111. Claim 37 has been canceled and newly submitted Claim 60 recites that the colloid-forming polymeric acid is a fluorinated polymeric sulfonic acids. Applicants respectfully submit that this rejection has been overcome and request that it be withdrawn.

Pickup, et al.

Applicants' claims, as recited herein, are drawn to an aqueous dispersion of a polydioxythiophene and at least one colloid-forming polymeric acid, wherein said colloid-forming polymeric acid is a fluorinated polymeric sulfonic acid. Applicants respectfully submit that Pickup does not teach or suggest an aqueous dispersion of such materials.

Pickup describes the "PEDOT/Nafion" composite as a powder (abstract, and page 23, § 3.1, first paragraph) or "gel-like" (page 23, § 3.1, second paragraph). A gel is defined as a

colloid in which the disperse phase has combined with the continuous phase to produce a jelly-like product (reference enclosed). Powders and gels are not the same as an aqueous dispersion.

Furthermore, Applicants submit that the process used by Pickup to form the composites is not the same as Applicants' process. Applicants' process is described throughout the specification, and particularly at page 2, lines 1-11, page 9, lines 9-16, and the examples. The process involves combining an oxidizer and a catalyst, in any order, with an aqueous dispersion of a colloid-forming polymeric acid before or after it is combined with an aqueous mixture of water and a thiophene. Catalysts include ferric sulfate and ferric chloride (see the application at page 9, lines 17-18). In the examples, the mole ratio of Fe^{+3} to thiophene monomer is less than 0.02. Clearly the Fe^{+3} is present as a catalyst. In the syntheses of Pickup, Fe^{+3} salts are used as the oxidant, and there is no catalyst. The ratio of Fe^{+3} to ethylenedioxythiophene monomer is 5-10. As noted by Pickup, the composites were found to have Fe^{+3} associated with the polyanion, presumably due to their strong association (page 23, § 3.1, second paragraph). Thus, Pickup's synthesis results in a different product than Applicants' stable aqueous dispersion.

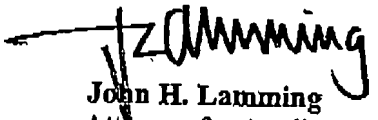
Accordingly Applicants respectfully submit that this rejection be withdrawn.

Conclusion

For all of the foregoing reasons, Applicants respectfully submit that the rejections have been rendered moot or overcome by the foregoing amendments and remarks, and that the pending claims are in condition for allowance. A notice of allowance is earnestly solicited.

Should the Examiner have questions about the content of this paper or the status of the application, he is invited to call the undersigned at the telephone number listed below.

Respectfully submitted,



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gel

Dictionary

gel (jĕl)

n.

1. A colloid in which the disperse phase has combined with the dispersion medium to produce a semisolid material, such as a jelly.
2. See gelatin (sense 3).
3. A jellylike substance used in styling hair.

v., gelled, gel·ling, gels.

v.intr.

To become a gel.

v.tr.

To apply a gel to (the hair).

[Short for GELATIN.]

gelable gel'a·ble *adj.*

more articles below...

Sci-Tech Encyclopedia

Gel

A continuous solid network enveloped in a continuous liquid phase; the solid phase typically occupies less than 10 vol % of the gel. Gels can be classified in terms of the network structure. The network may consist of agglomerated particles (formed, for example, by destabilization of a colloidal suspension; a "house of cards" consisting of plates (as in a clay) or fibers; polymers joined by small crystalline regions; or polymers linked by covalent bonds.

In a gel the liquid phase does not consist of isolated pockets, but is continuous. Consequently, salts can diffuse into the gel almost as fast as they disperse in a dish of free liquid. Thus, the gel seems to resemble a saturated household sponge, but it is distinguished by its colloidal size scale: the dimensions of the open spaces and of the solid objects constituting the network are smaller (usually much smaller) than a micrometer. This means that the interface joining the solid and liquid phases has an area on the order of 1000 m^2 per gram of solid. As a result, the properties of a gel are controlled by interfacial and short-range

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The Condensed Chemical Dictionary

SEVENTH EDITION

Completely revised and enlarged by

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State College, Pa.

3
Chem

VAN NOSTRAND REINHOLD COMPANY
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The CHEMICAL CATALOG CO., INC.

END PAPER(FRONT): Styrene Plant of Monsanto Corp., Texas City
END PAPER (REAR): Catalytic Reforming Unit of Gulf Oil Co., Port Arthur, Tex.

Shipping regulations: (ICC, IATA) Flammable liquid. Red label. (CG) Inflammable liquid. Red label.*

gasoline, alkylate. Gasoline made by alkylation (q.v.).

Gasoline Antioxidant No. 5. [28] A solution of N-n-butyl-para-aminophenol in alcohols having the following weight composition: 50% N-n-butyl-para-aminophenol $HOC_6H_4NHC_4H_9$; 30% anhydrous isopropanol $(CH_3)_2CHOH$; 20% anhydrous methanol CH_3OH.

The solution is readily soluble in gasoline in normal use concentrations. The use of benzene or other aromatic solvent is recommended for preparation of concentrated solutions. Sp. gr. 0.90.

Containers: 55-gal steel drums.

Use: For reducing the formation of gum and precipitation of lead in gasoline.

"Gasoline Antioxidant No. 22." [28] Brand name for N,N'-di-sec-butyl-para-phenylenediamine, containing no solvent.

"Gasoline Antioxidant No. 23." [28] Brand name for a 50% solution of N,N'-di-isopropyl-para-phenylenediamine and alcohols. Sp. gr. 0.87. Readily soluble in gasoline at normal use concentrations.

Uses: For inhibiting the oxidation of gasoline, catalyzing the sweetening of sour blending stocks and inhibiting the precipitation of lead in gasoline. Concentrations vary from 0.0016-0.006% by wt.

Containers: 55-gal steel drums, tank cars and trucks.

gasoline, casinghead. See gasoline, natural.

gasoline, cracked (gasoline, pyrolysis). Gasoline produced by the thermal and/or catalytic decomposition of high-boiling components of petroleum. In general such gasolines have higher octane ratings than gasoline produced by fractional distillation of petroleum. The difference is due to the prevalence of unsaturated, aromatic and branched-chain hydrocarbons in the cracked gasoline. The actual properties vary widely with the nature of the starting material, and the temperature, time, pressure and catalyst used in the cracking process.

gasoline, ethyl. See gasoline, leaded.

gasoline, leaded (gasoline, ethyl). Gasoline to which tetraethyl lead has been added to increase its antiknock properties.

See octane number.

gasoline, natural (gasoline, casinghead). A volatile gasoline obtained by recovering the butane, pentane, and hexane hydrocarbons present in small proportion in certain natural gases. It is used in blending to produce a finished gasoline with adjusted volatility.

gasoline, polymer. A gasoline produced by polymerization of low molecular weight hydrocarbons such as ethylene, propene, and butenes. It is used in small amounts for blending with other gasolines to improve their octane number.

gasoline, pyrolysis. See gasoline, cracked.

gasoline, reformed. A high octane gasoline obtained from low octane gasoline by heating the vapors to a high temperature or by passing the vapors through a suitable catalyst.

gasoline, straight run. Gasoline produced from petroleum by distillation, without use of cracking or other chemical conversion processes.

"Gastex." [275] Trademark for semi-reinforcing gas furnace carbon black for rubber.

"Gastrografin." [112] Trademark for meglumine diatrizoate oral solution.

Gattermann-Koch reaction. The formation of aromatic aldehydes from phenols by the use of anhydrous hydrogen cyanide, dry hydrogen chloride, and an aluminum chloride or zinc chloride catalyst.

gaultheria (checkerberry; wintergreen; deerberry; boxberry; teaberry). The leaves of a small evergreen plant Gaultheria procumbens.

Habitat: Canada and northeastern United States.

Chief constituents: Methyl salicylate, arbutin, ericolin, and urson.

Use: Source of wintergreen oil.

gaultheria oil. See methyl salicylate.

gaultheria oil, synthetic. See methyl salicylate.

Gay-Lussac acid. The sulfuric acid-nitrogen oxides mixture which is the product of the Gay-Lussac tower in the chamber process for manufacture of sulfuric acid.

This acid has a sulfuric acid strength of 60° Bé, and a nitrogen oxides content of 1-2% calculated as N_2O_3.

Gay-Lussac's law. See Charles' law.

"G.B.S." [28] Trademark for globular sodium bisulfate, an easily handled solid acid.

GC. Abbreviation for gas chromatography.

Gd. Symbol for gadolinium.

GDCH. Abbreviation for glycerol dichlorohydrin. See alpha-dichlorohydrin.

GDME. Abbreviation for glycol dimethyl ether. See ethylene glycol dimethyl ether.

GDP. Abbreviation for guanosine diphosphate. See guanosine phosphates.

Ge Symbol for germanium.

Geiger counter. See Geiger-Mueller counter.

Geiger-Mueller counter. A common form of a nuclear radiation detector. It consists usually of a tubular cathode with a coaxial center wire anode, filled with one of several possible mixtures of gases. When a high voltage is impressed across the electrodes, ionizing radiation traversing the tube gives rise to conductivity pulses which may be electrically amplified and registered. Each ionizing event gives rise to one pulse, and the counter tube with its associated electrical circuitry "counts" the number of individual ionizing radiations.

gel. A colloid in which the disperse phase has combined with the continuous phase to produce a jelly-like product. Only 2% gelatin in water is required to form a stiff gel. A gel is most frequently made by cooling a solution whereupon certain kinds of solutes (gelatin is the best example) form submicroscopic crystalline particle groups which retain much solvent in the spaces between particles. Gels are usually transparent but may become opalescent.

gelatin. A protein obtained from collagen by boiling skin, ligaments, tendons, bones, etc. with water. Its production differs from that of glue in that the raw materials are selected, cleaned and treated with special care so that the resulting product is cleaner,

*See "Shipping Regulations," page xv.

Reference numbers refer to name of manufacturer. See "List of Manufacturers," page v.